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EXAMINER	
HOM, SHICK C	

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/733,629	BROWN, DAVID A.	
	Examiner	Art Unit	
	Shick C. Hom	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/16/05 have been fully considered but they are not persuasive.

In page 5 line 10 to page 6 line 13 applicant argued that Yamada et al. do not teach a method for updating a lookup table and providing access to a set of routes and associated subtree entry stored in memory by replacing pointers is not persuasive because col. 3 line 61 to col. 4 line 5 which recite the memory storing a route tree table having a tree structure of a plurality of nodes and Fig. 3 shows the set of routes and associated tree stored in memory 3 of Fig. 2, whereby the head node of the tree is node no. 1 and node no. 10 and node no. 2 are subtrees clearly anticipate the lookup table providing access to a set of routes and associated subtree entry stored in memory; col. 4 lines 42-60 which recite updating the held route data to the route data of the node data clearly anticipate updating the lookup table; and col. 16 lines 20-32 which recite providing the pointer associated with the route table address peculiar to the transmission destination apparatus for the transmission of the received packet clearly reads on replacing pointers for providing access to a set of routes as recited in

claims 1, 5, 9, and 13. In response to applicant's argument in page 6 line 14 to page 8 line 4 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for combining Kanamori et al. in the communication method and apparatus of Yamada et al. being that it provides more efficiency for the system since the system can reuse the memory space for other sets of routes by deallocating the space after access is completed; and the motivation for combining Beshai et al. in the communication method and apparatus of Yamada et al. being that it Beshai et al. teach providing the added feature of permitting more general purpose application of the routing system.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor

errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 5, 9, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (6,452,908).

Regarding claims 1, 5, 9, 13:

Yamada et al. disclose the method and apparatus for updating a lookup table (see col. 4 lines 42-60 and col. 16 line 60 to col. 17 line 12 which recite the table comprising the route data including the route data updating circuit and process) comprising the steps of: providing access to a first set of routes and associated first subtree entry stored in a first memory space in the lookup table through a first pointer to the first subtree entry (see col. 3 line 61 to col. 4 line 5

which recite the memory storing the route tree table having a tree structure of a plurality of nodes and col. 16 lines 20-31 which recite the use of a pointer to acquire the route data in the table); and storing a second set of routes and associated second subtree entry in a second memory space in the lookup table while access is provided to the first set of routes stored in the first memory space by the first pointer (see col. 4 lines 15-34 which recite the left and right child nodes clearly reads on the first and second set of routes and col. 16 lines 19-31 which recite the use of a pointer clearly reads on accessing the set of routes through the corresponding first and second pointer); and switching access to the second set of routes stored in the second memory by replacing the first pointer stored to the first subtree entry with a second pointer to the second subtree entry (see col. 4 lines 6-14 which recite the step of repeatedly referring to the route tree table by setting the current node data as the first or second next node data reads on replacing the first pointer with a second pointer).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (6,452,908) in view of Kanamori et al. (6,338,079).

Regarding claims 2, 6, and 10:

For claims 2, 6, and 10, Yamada et al. disclose the apparatus and method described in paragraph 3 of this office action. Yamada et al. disclose all the subject matter of the claimed invention with the exception of deallocating the first memory space after switching access.

Kanamori et al. from the same or similar fields of endeavor teach that it is known to provide the step and means for deallocating the first memory space after switching access (see col. 1 line 42 to col. 2 line 14). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the step and means for deallocating the first memory space after switching access as taught by Kanamori et al. in the communications method and apparatus of Yamada et al. The step and means for deallocating the first memory space after switching access can be implemented

by connecting a resource manager to the lookup table for deallocating the memory space of the set of routes of Yamada et al. The motivation for using the step and means of deallocating the first memory space after switching access as taught by Kanamori et al. in the communication method and apparatus of Yamada et al. being that it provides more efficiency for the system since the system can reuse the memory space for other sets of routes.

7. Claims 3-4, 7-8, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (6,452,908) in view of Beshai et al. (6,744,775).

Regarding claims 3-4, 7-8, and 11-12:

For claims 3-4, 7-8, and 11-12, Yamada et al. disclose the apparatus and method described in paragraph 3 of this office action. Yamada et al. disclose all the subject matter of the claimed invention with the exception of wherein the number of routes in the first set of routes is less than the number of routes in the second set of routes as in claims 3, 7, 8; and wherein the number of routes in the first set of routes is greater than the number of routes in the second set of routes as in claims 4, 8, 12.

Beshai et al. from the same or similar fields of endeavor teach that it is known to provide wherein the number of routes in the first set of routes is less than the number of routes in the second set of routes; and wherein the number of routes in the first set of routes is greater than the number of routes in the second set of routes (see col. 5 line 56 to col. 6 line 13 which recite that the number of routes in the route sets vary considerably). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein the number of routes in the first set of routes is less than the number of routes in the second set of routes; and wherein the number of routes in the first set of routes is greater than the number of routes in the second set of routes as taught by Beshai et al. in the communications method and apparatus of Yamada et al. The number of routes in the first set of routes being less than the number of routes in the second set of routes; and wherein the number of routes in the first set of routes being greater than the number of routes in the second set of routes can be implemented by replacing the routing table of Beshai et al. for the table of Yamada et al. The motivation for using the first and second set of routes as taught by Beshai et al. in the communication method and apparatus of Yamada et al. being that it provides the added

feature of permitting more general purpose application of the routing system.

8. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (6,452,908) in view of Przygienda et al. (6,563,823).

Regarding claims 14-17:

For claims 3-4, 7-8, and 11-12, Yamada et al. disclose the apparatus and method described in paragraph 3 of this office action. Yamada et al. disclose all the subject matter of the claimed invention with the exception of wherein the first set of routes and the second set of routes include a longest prefix route for the destination address as in claim 14; wherein the destination address includes an Internet Protocol address as in claim 15; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address as in claim 16; and wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as in claim 17.

Przygienda et al. from the same or similar fields of endeavor teach that it is known to provide wherein the first set of routes and the second set of routes include a longest prefix route for the destination address and wherein the second set of

routes includes another route corresponding to the longest prefix route for another destination address (see col. 4 lines 19-25 which recite a method for forwarding packets whereby the address of the received packet is matched with the longest prefix stored in the routing table) as in claims 14, 16; wherein the destination address includes an Internet Protocol address (see col. 5 lines 34-40 which recite the use of Internet Protocol addressing scheme by the forwarding device to direct or route data packet) as in claim 15; and wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree (see col. 3 lines 11-36 which recite longest match prefix being at the bottom level) as in claim 17. Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an Internet Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; and wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Przygienda et al. in the communications method and apparatus of Yamada et al. The first

set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an Internet Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; and wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree can be implemented by replacing the routing table and method of accessing route of Przygienda et al. for the table and routing of Yamada et al., and provide the use of IP protocol addressing of Przygienda et al. for the addresses of Yamada et al. The motivation for using the first set of routes and the second set of routes including a longest prefix route for the destination address; wherein the destination address includes an Internet Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; and wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Przygienda et al. in the communication method and apparatus of Yamada et al. being that it provides the added features of performing longest match address lookups for routing packets through the Internet.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
Wilford et al. disclose an architecture for high speed class of service enabled linecard.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick C. Hom whose telephone number is 571-272-3173. The examiner can normally be reached on Monday to Friday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

DANG TON
PRIMARY EXAMINER